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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,301	06/27/2003	Nishit Kumar	3551P053	8950

8791 7590 01/12/2007

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EXAMINER	
CERVONE, MICHAEL ANTHONY	
ART UNIT	**PAPER NUMBER**
2131	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/608,301	KUMAR ET AL.	
	Examiner	Art Unit	
	Michael A. Cervone	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4-7, 11-13, and 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong et al. (US 2004/0019913).

5. As per claim 1, Wong is directed to a transport processor comprising: a front end to receive multiple transport streams, each transport stream including a plurality of packets [See 0026, and 0028], the front end comprising a packet processor to create an aggregate transport stream [See 0039 and 043]; a memory (CPU/PPIM) to store the aggregate transport stream [See 0043].

6. As per claim 2, Wong is applied as stated in the rejection of claim 1. Wong further teaches that the number of streams within the aggregate transport stream is scaleable [See 0044].

7. As per claim 4, Wong is applied as stated in the rejection of claim 1. Wong further teaches that the aggregation of transport streams permits the use of a single PID filter, a single descrambler, and a single demultiplexer [See 0028 and Fig. 1].

8. As per claim 5, Wong is applied as stated in the rejection of claim 1. Wong further teaches a descrambler to descramble the packets in the aggregate transport stream [See 0028 and 0029].

9. As per claim 6, Wong is applied as stated in the rejection of claim 5. Wong further teaches a packet level control and key RAM control logic to select a descrambling standard (CCIR-656) for a packet within the aggregate transport stream [See 0029]; a decryption circuit to descramble the packet using the selected descrambling standard [See 0028-0029].

10. As per claim 7, Wong is applied as stated in the rejection of claim 1. Wong further teaches a packet processor to format each packet from multiple streams to a common format (Mpeg), the common format including originating stream information [See 0026].

11. As per claim 11, Wong is applied as stated in the rejection of claim 1. Wong further teaches that the aggregate stream includes transport data obtained from different transport protocol standards [See 0044-0045].

12. As per claim 12, Wong is applied as stated in the rejection of claim 1. Wong further teaches a plurality of input/output (I/O) ports; an I/O port that is user-selectable to a parallel or serial format [See 0035 and 0039].

13. As per claim 13, Wong is applied as stated in the rejection of claim 12. Wong further teaches a serial output block to resample parallel data, and to convert the parallel data to serial data with an independently programmable bit clock selection [See 0040 and Fig. 1, item 70].

14. As per claim 18, Wong is directed to a system on a chip (SOC) comprising: a transport processor to PID filter, descramble, and demultiplex a plurality of transport streams [See 0028 and Fig 1]; a memory to store demultiplexed outputs of the plurality of transport streams [See 0029]; and an output processor to retrieve one or more demultiplexed outputs from the memory and perform audio/video decode and display functions simultaneously [See 0040-0042]

15. As per claim 19, Wong is applied as stated in the rejection of claim 18. Wong further teaches that the output processor is a combination of digital audio decoder, digital video decoder, audio processor, and display processor [See 0040 and Fig. 1, item 10].

16. As per claim 20, Wong is applied as stated in the rejection of claim 19. Wong further teaches that the audio and video frames for two independent transport streams are rendered without repeated or skipped frames [See 0043 and 0044. Examiner asserts that this feature is inherently disclosed, as the transmission of video and audio data would be incomplete or un-viewable if the frames were repeated or skipped.]

17. As per claim 21, Wong is applied as stated in the rejection of claim 18. Wong further teaches a front end to receive multiple transport streams, each transport stream including a plurality of packets [See 0026, and 0028], the front end comprising a packet processor to create an aggregate transport stream [See 0039 and 043]; and a readback logic to read packets from the memory, for descrambling and demultiplexing functions [See 0043].

18. As per claim 22, Wong is applied as stated in the rejection of claim 18. Wong further teaches a memory interface to access the contents of the memory, the memory interface used by the transport processor and the output processor [See 0043 and Fig. 1 interface and transport].

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 2004/0019913).

21. As per claim 8, Wong is applied as stated in the rejection of claim 7. Wong further teaches that the common format is a 208-byte format (mpeg), and smaller packets are padded to create this common format [See 0026. Examiner asserts that the 208-byte format is inherently disclosed by Wong using MPEG encoding and an MPEG transport stream. Mpeg transport stream have packet sizes of 188, 204 and 208. When transmitting packets it is common to pad packets with null values in order transmit the standard size packet.]

22. As per claim 9, Wong is applied as stated in the rejection of claim 7. Wong further teaches that the originating stream information comprises temporal information [See 0026. Examiner asserts that the temporal information is inherently disclosed by Wong using MPEG encoding and an MPEG transport stream. Mpeg transport stream contain temporal information such as a sync byte, continuity counters, transports fields and/or adaptation fields.]

23. As per claim 10, Wong is applied as stated in the rejection of claim 7. Wong further teaches that the originating stream information comprises stream identifier and

additional user specified information [See 0026. Examiner asserts that the stream identifier and additional user specified information is inherently disclosed by Wong using MPEG encoding and an MPEG transport stream. Mpeg transport streams contain stream identifiers and additional user specified information such as the PID and the payload]

24. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 2004/0019913) in view of Lawrence (US 6,721,957).

As per claim 3, Wong is applied as stated in the rejection of claim 1. Wong further teaches a packet filter [See 0028 and Fig. 1], but fails to teach that is used to discard packets in order to minimize memory bandwidth and improve descrambling and demultiplexing throughput. Lawrence is directed to a method for maximizing bandwidth efficiency in a video stream which teaches a PID filter (null filter) to discard packets in the aggregate transport stream prior to processing, in order to minimize memory bandwidth and improve descrambling and demultiplexing throughput [See Col. 7, lines 40-49 as well as Fig. 4b]. Wong and Lawrence are analogous art because they are both directed to methods for transporting digital media across transport streams. It is obvious to one skilled in the art to filter out null packets using a packet filter. Null packets take up space and bandwidth and are not needed. The null filter, therefore "maximizes bandwidth efficiency" [See Col. 7, lines 43-46].

As per claim 14, Wong is applied as stated in the rejection of claim 1. Wong teaches a packet filter [See 0028 and Fig. 1], a descrambler to descramble the remaining packets in the aggregate stream; and a demultiplexer to demultiplex the descrambled packets in the aggregate stream; wherein the descrambler and the demultiplexer receive only the packets of interest [See 0028-0030 and 0040], but fails to teach that the packet filter is used to discard packets that aren't of interest. Lawrence is directed to a method for maximizing bandwidth efficiency in a video stream which teaches a PID filter (null filter) to discard packets that aren't of interest in the aggregate transport stream prior to processing, in order to minimize memory bandwidth and improve descrambling and demultiplexing throughput [See Col. 7, lines 40-49 as well as Fig. 4b]. Wong and Lawrence are analogous art because they are both directed to methods for transporting digital media across transport streams. It is obvious to one skilled in the art to filter out null packets using a packet filter. Null packets take up space and bandwidth and are not needed. The null filter, therefore "maximizes bandwidth efficiency" [See Col. 7, lines 43-46].

25. Claims 15-17, 23, 24 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 2004/0019913) in view of Weis (US 2001/0005380).

26. As per claim 15, Wong is applied as stated in the rejection of claim 1. Wong fails to teach the use of a switching matrix to select a subset of streams for storage. Weis is directed to a node for switching digital information which teaches a switching matrix to

select a subset of the streams out of a plurality of streams for storage and subsequent descrambling and demultiplexing [See 0003]. Wong and Weis are analogous art because they are both directed to the transportations of digital data over streams. It is obvious to one skilled in the art to use the switching matrix of Weis in order to switch between streams so "incoming information streams can be forwarded from each port of an input module to each port of an output module" [See 0003].

27. As per claim 16, Wong and Weis are applied as stated in the rejection of claim 15. Wong fails to teach a switching matrix. Weis is directed to a node for switching digital information which teaches a switching matrix with a delay circuit to switch to a new stream after receiving an end of packet signal from an original stream, such that only complete packets from the original stream are propagated [See 0010 and 0062-0063]. Wong and Weis are analogous art because they are both directed to the transportations of digital data over streams. It is obvious to one skilled in the art to use the switching matrix of Weis in order to switch between streams so "incoming information streams can be forwarded from each port of an input module to each port of an output module" [See 0003].

28. As per claim 17, Wong and Weis are applied as stated in the rejection of claim 16. Wong fails to teach a switching matrix. Weis is directed to a node for switching digital information which teaches a switching matrix with a data valid signal to indicate that the output of the switching matrix is valid only after an end of packet signal is

received from the new stream, such that only complete packets from the new stream are propagated [See 0010 and 0062-0063]. Wong and Weis are analogous art because they are both directed to the transportations of digital data over streams. It is obvious to one skilled in the art to use the switching matrix of Weis in order to switch between streams so "incoming information streams can be forwarded from each port of an input module to each port of an output module" [See 0003].

29. As per claim 23, Wong is directed to a transport processor with a front end to receive a plurality of transport streams from multiple digital receivers [See 0026, and 0028], the front end comprising a packet processor to receive the subset of the plurality of transport streams and to aggregate the subset of the plurality of streams into a single aggregate transport stream [See 0039 and 043], but fails to teach a switching matrix. Weis is directed to a node for switching digital information which teaches a switching matrix to receive the plurality of transport streams and to output a programmable subset of the plurality of transport streams [See 0003]. Wong and Weis are analogous art because they are both directed to the transportations of digital data over streams. It is obvious to one skilled in the art to use the switching matrix of Weis in order to switch between streams so "incoming information streams can be forwarded from each port of an input module to each port of an output module" [See 0003].

30. As per claim 24, Wong and Weis are applied as stated in the rejection of claim 23. Wong further teaches a memory (CPU/PPIM) to store the aggregate transport stream [See 0043].

31. As per claim 26, Wong and Weis are applied as stated in the rejection of claim 24. Wong further teaches an external input/output (110) to receive the plurality of transport streams, the external 1/0 having a plurality of bi-directional ports [See 0035 and 0039 as well as Fig. 1].

32. As per claim 27, Wong and Weis are applied as stated in the rejection of claim 26. Wong further teaches each of the bidirectional ports can be configured as either a single parallel or a pair of serial ports [See 0040 and Fig. 1, item 70].

33. As per claim 28, Wong and Weis are applied as stated in the rejection of claim 27. Wong further teaches a bi-directional port includes a serial input block to receive serial input and generate a synchronized parallel output [See 0040 and Fig. 1, item 70].

34. As per claim 29, Wong and Weis are applied as stated in the rejection of claim 27. Wong further teaches a bi-directional port includes a serial output block to generate a serial transport stream with an independent bit clock for output [See 0040 and Fig. 1, item 70]

35. As per claim 30, Wong and Weis are applied as stated in the rejection of claim 23. Wong fails to teach a switching matrix. 30. Weis is directed to a node for switching digital information which teaches a switching matrix with a stream select delay unit to ensure that only compete packets are propagated [See 0010 and 0062-0063]. Wong and Weis are analogous art because they are both directed to the transportations of digital data over streams. It is obvious to one skilled in the art to use the switching matrix of Weis in order to switch between streams so "incoming information streams can be forwarded from each port of an input module to each port of an output module" [See 0003].

36. As per claim 31, Wong and Weis are applied as stated in the rejection of claim 23. Wong further teaches attaching appropriate header and footer information to transport packets in the subset of the plurality of transport streams [See 0026. Examiner asserts that the attached header and footer information is inherently disclosed by Wong using MPEG encoding and an MPEG transport stream. Mpeg transport streams have both headers and footers added to packets prior to transmission.]

37. As per claim 32, Wong and Weis are applied as stated in the rejection of claim 31. Wong further teaches the packet processor generates packets of a uniform size, regardless of originating protocol [See 0026. Examiner asserts that uniform packers are inherently disclosed by Wong using MPEG encoding and an MPEG transport stream. Mpeg transport streams only transmit packet sizes of 188, 204 and 208, any

other size may not be transmitted. When transmitting packets it is common to pad packets with null values in order transmit the standard size packet.]

38. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 2004/0019913) in view of Weis (US 2001/0005380) as applied to claim 23 above, and further in view of Lawrence (US 6,721,957).

As per claim 25, Wong and Weis are applied as stated in the rejection of claim 24 Wong teaches a packet filter [See Wong 0028 and Fig. 1], but fails to teach that the packet filter is used to discard packets that aren't of interest. Lawrence is directed to a method for maximizing bandwidth efficiency in a video stream which teaches a PID filter (null filter) to discard packets that aren't of interest in the aggregate transport stream prior to processing, in order to minimize memory bandwidth and improve descrambling and demultiplexing throughput [See Col. 7, lines 40-49 as well as Fig. 4b]. Wong and Lawrence are analogous art because they are both directed to methods for transporting digital media across transport streams. It is obvious to one skilled in the art to filter out null packets using a packet filter. Null packets take up space and bandwidth and are not needed. The null filter, therefore "maximizes bandwidth efficiency" [See Col. 7, lines 43-46].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Cervone whose telephone number is 571-272-3712. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAC 1/5/07

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